Electronic Version
Stylesheet Version v1.1.1

# [VOLTAGE-CONTROLLED OSCILLATORS]

## Abstract

A voltage-controlled oscillator (VCO) comprising an odd number of delay stage circuits. Each delay stage circuit operates between supply voltages VDD and VSS (VDD > VSS) and comprises (1) an input node, (2) an output node, (3) an inverting circuit, and (4) an electric discharge path coupling the output node to VSS. The electric discharge path includes a switch circuit and a resistance adjusting circuit electrically coupled in series between the output node and VSS. In response to an input signal rising at the input node, the inverting circuit decreases an output signal at the output node, and the electric discharge path opens to help pull the output signal down faster. In response to an input signal falling at the input node, the inverting circuit increases the output signal at the output node, and the electric discharge path closes to minimize its own effect.